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است

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حاضریہ [9]

* Start from slide 4.21

- Main component of networks is router

* From previous lecture: forwarding and routing

ال forwarding مرتبط اکثریاد switches، و تکرار و ترسی داخل switch

* Router structure 4.22

(1) input port

(2) output port

(3) switching fabric → output و input سے ربط

(4) Routing Processor

* کل، راوتر داخل forwarding table

* يتم بناء ال forwarding table باستخدام مجموعة من ال Routing Algorithms (4.22)

* Some routing Algorithms are static, others are dynamic

routing processor has management control plane, which is a software with the output being the forwarding table. Remaining components are hardware

forwarding table is stored at input ports.

input port (4.23)

~~XXXX~~ - line termination (physical layer)

- link layer protocol

- Lookup forwarding → forwarding table

و تکرار و ترسی داخل switch fabric

* ال راوتر بیست جدول داتا تکرار و ترسی داخل switch fabric

ال داتا تکرار و ترسی داخل switch fabric و هو فعال

decentralized switching Advantages (من راور مختصه فزده
forward table
 - reduced memory
 - high speed

(4.24) switching Fabric structure (techniques)

① memory (4.25)

* input يتخزن في صيوري ويافدها output
 * يجب انك لا ترم Datagram واحدة كل مرة، انا عليه Read و write

② Bus (4.26)

③ Grid (4.27) interconnection network

* ده الي خصال دلوقت.
 * يفرد عم ال Bus، انك فتحه لدا port — يرمي على كذا
 output في نفس الوقت.

* هيظهر مشكلة انك اتقنيم يرموا على نفس ال output port

output Ports (4.28)

Same as input port but reversed and no forwarding table; it has scheduling algorithm.

- QoS: ~~depending~~ depending on the scheduling algorithm;

where the algorithm determine important data first

- Queue result in packet loss "sometimes" (4.29)

* check queuing issue at 4.29

* مشكلة في انك كذا packet > اتقنيم على نفس ال output port

* buffer sized depend on RTT and link capacity

check 4.30

* head of line "HOL" issue (4.31)

= internet protocol (IP) [4.33]

- ① Routing Protocol $\xrightarrow{\text{creates}}$ forwarding table
- ② IP: check 4.33
- ③ ICMP (control protocol)

* IPv4 vs IPv6 Presentation